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**Stimulus collative properties in food products and their importance for consumer liking:
A case study with novel beers**

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Introduction

There is a dilemma between liking for familiar stimuli and a wish to experiment with new ones. Berlyne's theory on aesthetic preference¹, predicts that to maximize sensory appreciation, a (food) product should aim at optimizing the balance between familiarity and novelty.

Methods

Eight beers were tested by a consumer panel (N=135), for which relevant consumer characteristics – namely product knowledge, food neophobia and variety seeking tendency – were known. Consumers evaluated liking and three collative properties: novelty, familiarity and complexity.

Results

A multiple linear regression model was carried out to analyze effects of the three collative properties on liking (Adj. $R^2 = .4$, $F_{(3, 1076)} = 239.66$, $p < .001$). All properties significantly positively predicted liking, with complexity ($b = .47$, $t_{(1076)} = 14.67$, $p < .001$) and familiarity ($b = .39$, $t_{(1076)} = 15.06$, $p < .001$) being the strongest regressors, followed by novelty ($b = .27$, $t_{(1076)} = 8.23$, $p < .001$). Non-linear relationships were assessed by computing smoothing points using locally weighted polynomial regression². Berlyne's predicted trajectory (inverse U-shaped) described most accurately the relationship between novelty and liking (Figure 1a), whereas the relationships between liking and the two other collative properties is linear and monotonic (Figure 1b+c).

ANOVA was performed using consumer traits as main effects. High variety seeking consumers gave significantly higher overall liking ($p = .008$). Consumers with higher product knowledge rated the beers significantly more familiar ($p = .02$), less novel ($p = .03$) and less complex ($p < .001$). No significant effects of degree of neophobia were observed.

Conclusion

Taken overall, our results confirm that liking is indeed a result from a combination of novelty, familiarity and complexity. Furthermore, we expand prior work on collative properties in a food context, by showing that several different consumer variables need to be taken into consideration for predicting consumer liking.

References:

¹ Berlyne, D. E. (1970). Novelty, complexity and hedonic value. *Perception and Psychophysics*, 8, 279-286.

² Cleveland, W. S. (1979). Robust Locally Weighted Regression and Smoothing Scatterplots. *Journal of the American Statistical Association*, 74, 829-836.

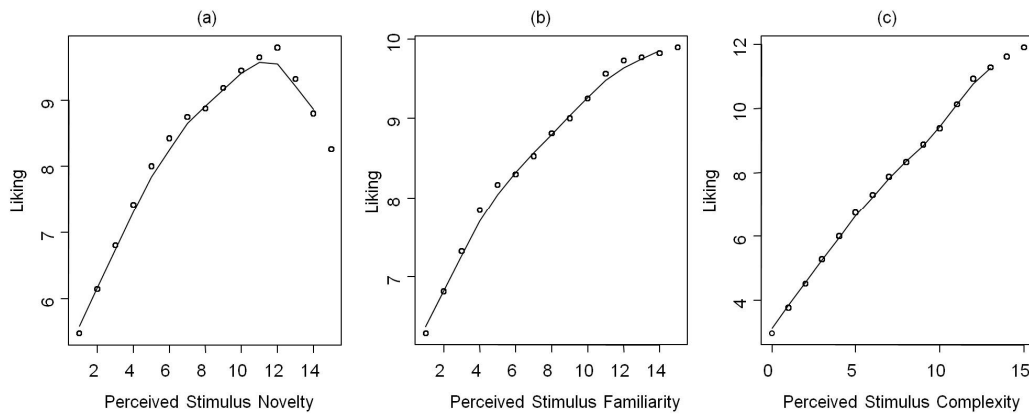


Fig. 1 – Robust smoothed values of novelty (a), familiarity (b) and complexity (c) against liking.

Keywords: Product experience, Arousal theory, Novelty, Consumer psychographics